Residential Gray Water Collection & Use in Austin, Texas

What is gray water?

Gray water (also referred to as graywater, greywater, and greywater) is defined as household wastewater from bathroom sinks, showers, bathtubs, clothes washers, and laundry tubs. Wastewater that has had contact with human waste (such as from washing diapers) or hazardous materials, as well as kitchen wastewater is not a source of gray water. Reclaimed water (treated wastewater effluent provided by Austin Water) is not defined as gray water.

Why should I use gray water?

Certain uses – including those recommended for gray water – don't require water that's treated to the same level necessary for drinking, cooking, or bathing. By using water that's suited for its use you can conserve treated potable water, reduce the demand on water treatment plants providing that potable water and the wastewater treatment plants treating wastewater, reduce energy and chemical use in the process, while paying for water once and using it twice!

How can I use gray water?

Gray water can be used for non-potable outdoor uses including landscape, tree, and turf irrigation and foundation watering. It must be distributed at least 2 inches below grade through subsurface irrigation, topped with soil, mulch, or gravel and should not be sprayed, allowed to pool, pond, or runoff the property.

To most effectively use gray water, follow the tips below:

- Remember that gray water may only be discharged through subsurface irrigation.
- Because gray water is slightly alkaline, avoid using it on plants that thrive in acidic soils
- To avoid salt accumulation, distribute gray water over a large area and rotate distribution.

Gray water **may not** be used for toilet flushing in single-family properties, water features (ponds, fountains, waterfalls, creeks, etc.), or in vegetable gardens with root crops or where the edible portion of the crop touches the ground.

How much water can I save by using gray water?

That depends on the number of people in your household and the number of fixtures you're collecting from. In a 2.6 person household with all available fixtures connected, estimates range from about 40 to 90 gallons per household per day.

Is gray water safe to use?

Microbial concentrations in gray water far exceed the levels permitted for drinking water. To protect the inhabitants of your home, your neighbors, and the community, it's important to understand that gray water systems cannot connect in any way to the public water supply and that contact with gray water should be avoided.

To use gray water more safely:

- Divert gray water to the public wastewater system if someone in your home comes down with a contagious disease to avoid exposing other individuals to disease-causing organisms.
- Water used to wash clothing soiled by human waste (i.e. cloth diapers), pesticides, or other toxic substances should not be discharged into your gray water system.
- A gray water system is essentially a mini wastewater treatment system. Regular operational and maintenance checks must be performed.

- Avoid irrigating root crops and seedlings with gray water.
- Discontinue use if someone becomes ill following exposure to gray water disposal areas. Use can continue once it's been determined that the exposure didn't cause the illness.

How is gray water collected?

There are different methods of collecting gray water. The simplest method is to divert the wastewater from your clothes washer directly to irrigation piping (known as a "Laundry to Landscape" system). More complex methods can include multiple gray water sources, a holding tank, pump, and filtration, and typically require more maintenance, are more expensive, and use more energy.

How should my gray water system be designed?

Gray water system design, installation, and use are regulated by the Texas Commission on Environmental Quality (TCEQ) at the state level and the City of Austin Plumbing Code at the municipal level. Title 30, Part 1, Chapter 210, Subchapter F of the Texas Administrative Code (TAC) outlines the criteria for gray water use in Texas. State regulations on gray water are also included in the Texas Health & Safety Code §341.039 and the Texas Water Code §26.0311.

TCEQ does not require authorization for domestic use under 400 gallons per day as long as the following criteria are met:

- Originates from a private residence
- Can be diverted to an organized wastewater system
- Tanks labeled, access restricted, pest habitat eliminated
- Ponding, pooling, or runoff prevented
- Spray irrigation is not used
- Does not create a nuisance or damage water quality
- Horizontal separation between pipes
- Piping painted purple & labeled
- Storage tanks meet AWWA standards

Additionally, Chapter 290 of the TAC requires that an adequate internal cross-connection control program be in place to protect the public water supply.

To regulate residential gray water use at the municipal level, Chapter 16 of the 2012 Uniform Plumbing Code (UPC) was adopted. Additional requirements are found in §25-12-153 of the City Code.

Gray water systems can use a mechanical pump or if the irrigated area is at a lower level than the gray water outputs, the system can operate by gravity. For more information on designing and installing a gray water system, contact Austin Water Conservation at 512-974-2199.

Do I need a permit to install a gray water system?

Yes. For laundry-to-landscape systems and other gravity-flow systems using 250 gallons per day or less, homeowners may pull their own permit. For gravity-flow systems that use more than 250 gallons per day and for pressurized systems, the installer (either a licensed plumber or professional engineer) must pull the permit.

What kind of permit do I need to install a gray water system and where do I get it?

You will need to get an auxiliary water permit. This permit can be obtained at the City of Austin's **One Stop Shop**, located at 505 Barton Springs Road. The One Stop Shop is open Monday through Friday from 8:00am until 3:00pm.

Do gray water systems need to be inspected?

Yes. An initial cross-connection test must be conducted following the installation of laundry-to-landscape systems and other gravity flow systems that use 250 gallons or less. Gravity-flow systems using over 250 gallons and all pressurized systems will require more frequent inspection.

Does gray water need to be treated before it's used?

The level of treatment is dictated by the gray water end use. Gray water can be treated through a variety and combination of methods, including reverse osmosis, media filtration, sedimentation/filtration, biological treatment, disinfection, chlorine/bromine, iodine, and ultraviolet irradiation. For the uses allowed by the City of Austin, basic filtration should be the only treatment necessary.

What types of soaps, detergents, and other products should I use if I have a gray water system?

If you're using gray water, understand that what you put the down the drain is going to end up in your yard. With that in mind, make sure the products you use are safe for your landscaping, soil, wildlife, and the environment in general. Products should be plant-friendly – biocompatible – not just biodegradable, non-toxic, pH neutral, and free of sodium chloride (sodium, sodium complexes, salt) and borax (boron), two common ingredients in cleansers, detergents, soaps, toothpaste, and cosmetics. Common brands that are typically safe for gray water systems include Dr. Bronner's, Oasis, Vaska, and Ecos.

Consider the following when choosing products that will be used with gray water fixtures:

- Avoid chlorine (bleach) products as they are/it is extremely harmful to plants. Oxygenated (hydrogen peroxide) bleaches can be used in their place.
- Harmful (e.g. bleach) or contaminated products (e.g. dirty cloth diapers) should not be used with a gray water fixture. Divert contaminated gray water to the public sewer system until the contaminant is gone.
- Test the temperature of the gray water at its destination to make sure it's not too hot.
- Avoid powdered soaps and detergents as they often have high levels of sodium chloride.
- Be mindful of overusing disinfectants as they kill beneficial microbes in the soil.
- Other product ingredients to avoid: peroxygen, sodium perborate, sodium trypochlorite, petroleum distillate, alkylbenzene, "whiteners", "softeners", and "enzymatic" components

How do I maintain my gray water system?

The Texas A&M AgriLIFE Extension recommends the following be done to maintain gray water systems:

- Clean the effluent screen at least annually. Remove the screen and spray residuals off into a large bucket. Once the effluent screen has been replaced into the settling tank outlet, slowly pour wash water back into the settling tank.
- Remove accumulated solids from the settling tank. Contact a wastewater pumper to pump out the solids. Remove solids when they occupy about 25 percent of the tank's depth or about every 3 to 5 years.
- The gray water system may not be needed during the entire year. During seasons it is not used, set the diversion valve to direct flow to the wastewater system.
- If you use a laundry-gray water surface-discharging system, periodically move the drag hose to prevent gray water from ponding in the landscape.
- If you use a pressurized system, periodically replace the pump as it fails.

Does the City of Austin offer any financial incentives for gray water use?

Not at this time.

Who do I call for more information?

For more information about gray water systems or other available water conservation programs, contact Austin Water Conservation at 512-974-2199 or watercon@austintexas.gov.

Additional gray water system information will be coming soon.